

Result No.	Score	Query	Length	DB ID	Description
1	4782	100.0	928	20 AAY88417	Chlamydia pneumoniae antigen
2	4782	100.0	928	21 AAY90236	Chlamydia pneumoniae antigen
3	4774	99.8	949	20 AAY35050	Chlamydia pneumoniae antigen
4	1862	38.9	918	21 AAY69369	Amino acid sequence
5	1855	38.8	928	21 AAY94327	Chlamydia pneumoniae
6	1853	38.7	928	20 AAW88421	Chlamydia pneumoniae
7	1836	38.4	918	20 AAW88422	Chlamydia pneumoniae
8	1793	37.5	928	20 AAW88423	Chlamydia pneumoniae
9	1787	37.4	928	21 AAY90239	Chlamydia pneumoniae antigen
10	1787	37.3	928	20 AAY350504	Chlamydia pneumoniae
11	1763	36.9	930	20 AAY88418	Chlamydia pneumoniae antigen
12	1758.5	36.8	927	20 AAY350504	Chlamydia pneumoniae
13	1757	36.7	928	21 AAY90237	Chlamydia antigen
14	1755	36.7	930	20 AAW88424	Chlamydia pneumoniae antigen
15	1755	36.7	930	21 AAY90240	Chlamydia pneumoniae antigen
16	1734	36.3	936	21 AAY98842	Chlamydia pneumoniae
17	1732	36.2	914	20 AAW88429	Chlamydia pneumoniae
18	1705	35.7	925	21 AAY98843	Mature Chlamydia antigen
19	1685	35.2	885	21 AAY90238	Amino acid sequence
20	1634.5	34.2	945	21 AAY69368	Chlamydia pneumoniae
21	1621.5	33.9	945	20 AAW88428	C. pneumoniae CPN1
22	1432.5	30.0	841	21 AAY92818	Chlamydia pneumoniae
23	1429.5	29.9	841	20 AAY95548	Chlamydia pneumoniae
24	1348	28.2	922	21 AAY95548	Chlamydia pneumoniae
25	1345	28.1	922	20 AAY34597	Chlamydia pneumoniae
26	1344	28.1	922	20 AAW88419	Chlamydia pneumoniae
27	1286	26.9	643	20 AAY35056	Chlamydia pneumoniae
28	1278.5	26.7	973	21 AAY96274	Chlamydia pneumoniae
29	1132.5	23.7	597	20 AAY34611	Chlamydia pneumoniae
30	1130.5	23.6	671	20 AAY35050	Chlamydia pneumoniae
31	1092.5	22.8	1013	20 AAY16737	C. trachomatis B s
32	1090	22.8	1012	20 AAY16735	C. trachomatis LGV
33	1089.5	22.8	1013	20 AAY16738	C. trachomatis F s
34	1080.5	22.6	1006	21 AAB13639	C. trachomatis pmp
35	1064.5	22.4	982	21 AAB13633	C. trachomatis pmp
36	1015.5	21.2	1132	20 AAY35048	Chlamydia pneumoniae
37	995	20.8	507	20 AAY34614	Chlamydia pneumoniae
38	882	18.4	610	20 AAW88431	Chlamydia pneumoniae
39	850	17.8	880	21 AAB13632	C. trachomatis pmp
40	843.5	17.6	494	20 AAY34615	Chlamydia pneumoniae
41	84.2	17.6	866	21 AAB13638	C. trachomatis pmp
42	81.1	17.4	427	20 AAY34613	Chlamydia pneumoniae
43	827	17.3	483	20 AAY34609	Chlamydia pneumoniae
44	785	16.4	450	20 AAY34617	Chlamydia pneumoniae
45	779.5	16.3	530	20 AAY35064	Chlamydia pneumoniae

outer membrane proteins of *C. pneumoniae* or nucleic acids encoding these proteins

Claim 7; Page 40-42; 115pp; English.

This polypeptide comprises the novel 98 kDa surface exposed protein **Omp4** of the human respiratory pathogen *Chlamydia pneumoniae*. Its amino acid sequence was deduced from DNA (see **AAX06816**) isolated from a *C. pneumoniae* expression library. The invention provides 12 novel surface exposed proteins, **Omp4-Omp15** (**AAX08417-28**), and nucleic acid sequences encoding them (see **AAX06816-27**). A new species specific test is claimed that is used to identify mammals (including humans) infected with *Chlamydia pneumoniae*. The test comprises detecting antibodies specific for **Omp4-Omp15** or detecting nucleic acid fragments encoding these outer membrane proteins, especially by PCR. The proteins are also used in the diagnosis of *C. pneumoniae* infection in mammals. The nucleic acids and proteins can also be used in the immunization of mammals, the nucleic acids being particularly useful as DNA vaccines for effecting in vivo expression of antigens. The vaccines may also prevent atherosclerosis and bronchial asthma, which are possibly associated with *C. pneumoniae*.

CC encode according to standard recombinant DNA methodologies. The  
 CC proteins may then be used as antigens for the production of antibodies  
 CC (i.e. as vaccines) for preventing infection by Chlamydia. The  
 CC antibodies may also be used as diagnostic reagents for detecting  
 CC infections. Chlamydia is a pathogen implicated in the development of  
 CC (for example) community acquired pneumonia; upper respiratory tract  
 CC disease (especially bronchitis and sinusitis); asthmatic bronchitis;  
 CC adult-onset asthma and acute exacerbations of asthma in adults.

XX Sequence 928 AA;

CC	Db	841 igdyytqsfvrsdyrrnnpqstativmspdawkingnlrsqafllrgsnyvynsn 900
CC	Qy	901 CELEGHYANLRGSSRNRNNDVGTKLRF 928
CC	Db	901 celghyane lrgrssrrnndvgtklrf 928
XX		
RESULT 3		
SQ	AY35060	standard; Protein: 949 AA.
	ID	AY35060
	XX	
	AC	AY35060;
	DT	13-SEP-1999 (first entry)
	XX	Chlamydia pneumoniae cellular envelope protein.
OY	1	MKTSIPWLVSSYLAFSCHLOSSANEELSPDOSFNGNIDSGCFTPKHSATTTSLTGDFV 60
Db	1	mksipwlvssylafschlossaneelspdossfngnidsgftpktsatysltgavf 60
OY	61	FYEFGKGTPPLSDSCFKQTMDNTLFGNCHSLLTGFIDAGTHAGAAASTANKNUTFSGFS 120
Db	61	fyeegkgtpplsdscfkqtmdntlfngnchsltgfidagthaasastanknltfsgrs 120
OY	121	LISFDPSSTTWTGQGPMLSSAGGVNLNIRKLVAGNSTAGGATIKGASFLLTGSGD 180
Db	121	lisfdpssttwtgqgpmlssaggvnl nirklvagnfstaggatikgasfltgsgd 180
OY	181	ALFSNNSSSTRGGAIAATTAGARIANNTGYVRLNSIASTSGGATDEGTSLSNNKFLYF 240
Db	181	alfsnnssstrggaiattagariannntgyvrflnsiasts gggaddctsilsnnkflyf 240
OY	241	EGLAAKTTGGATCINTKASGSPELJTSNNKTLTEFASVNTAETSGGATHAKKLAISSGGTETF 300
Db	241	egeaaaktggaintkasspeilisnnktlitasvntaetsggat hakklaissggtfef 300
OY	301	LRINVSSATPKGGAIISDASGEELS AETGNITFVRNLTGSTDTPKRNAINIGNSNK 360
Db	301	lrinvssatpkggais dasgesl ssaetgnitfvrnltgstdtpkrna inigsnk 360
OY	421	DNLKSSFTOPVSLSGGGKLUOKGTYLTTESTSFSEOBAGSLI GMDGTTLSTTAGSITITNLG 480
Db	421	dnlkssftopvslsggkluokgt ylttestsfseobagsli gmdgttsttagitnlg 480
OY	481	INYDSIGLKQPVSILTAGSKANVKIVVSKGLNLDIEGNITYEHSMSHDOFLSLKITVDAD 540
Db	481	inysdiglkqpvs itakasnkvivskgl nldiegnityehs mshdof lslkitvdad 540
OY	541	VDTNDISSLIPPAEDPNESEYFGQGQWNVNWTDTATNTKEATAWTKTFGPSPERKS 600
Db	541	vdtndisslippa edpneseyfgqgqvnvnwttdatntkeata wtktfgp spersks 600
OY	601	ALVCNTLRCVFTDIRSLSOLVEIGATGMEMHKOGEWSSMTNFHLKHTGDENRKFRHTSGG 660
Db	601	alcntlrcvftdirslqlveigatgmehko gefwsmtnfhlktgdernrkfrhtsgg 660
OY	661	YYIGGSAHTPKDKDLFTFAFCHLFARDKNCFCIAHNNSPRYGGTLEFKHSHTLQPNQYLRG 720
Db	661	yyigg sahtpkdkdlftfafc hlfar dkcfcia hnnsprygg tlefkhshtlqpnqylrg 720
OY	721	RKFESALEKFPREPIALDQVSYFSHSDNRNETHTSLSPEBGSWSNECTAGIGIDL 780
Db	721	rakfesa lekfp repi aldwqsfshs dnrneth ts lspebgs wsne ctagigidl 780
OY	781	PFVLSNPHPFLKFPTIPOMKVMVYVSONSFFESSSDGRGFSTGRLNFSIYPGAKFYQGD 840
Db	781	pfvlsnphpflkfptipomkvmemvysqspffesssdgrgfsiqrlnisipgakfyqgd 840
OY	841	IGDSYTYLISGFVFSVDYRVNNPQSTATIVMSPPSWKIRGGLNLSQAFLLRSNINYYVNSN 900
Db	142	11sfssspstvtcqgttssaggvnlenirkivvagnfnstada gkaqgasfltgsgd 201

Query Match	99.8%	Score 4774;	DB 20;	Length 949;
Best Local Similarity	99 %;	Pred. No. 0;	Gaps 0;	
Matches	927;	Conservative 0;	Mismatches 1;	Indels 0;
OY	1	MKTSLIPWVLYSSVLAFSCHLOSSANEELSPDOSFNGNIDSGCFTPKHSATTTSLGDFV 60		
Db	22	mktslipwvlyssvlafschlossaneelspdossfngnidsgftpkhsatysltgavf 81		
OY	61	FYEBGKGTPPLSDSCFKQTMDNTLFGNCHSLLTGFIDAGTHAGAAASTANKNLTFSGFS 120		
Db	82	fyebgkgtpplsdscfkqtmdntlfngnchl tgfidagthagaastankoltfs 141		
OY	121	LLSPDSISPSTVITGOTUSSAGGVNLENIRKLVAGNSTADGAIKGASFLTGSGD 180		
Db	142	11sfssspstvtcqgttssaggvnlenirkivvagnfnstada gkaqgasfltgsgd 201		

QY	181 ALFSNNSSSTKGGIAATTAGARIANNTGYVRFLSNIASTSGGAIIDEGTSILSNINKFLYF	240	XX	PR	20-AUG-1998;	98US-0097187.
Db	202 alfsnnssstkgiaattagariannntgavrflsniaastsggaiddegtsilsninkflyf	261.	XX	PR	20-AUG-1998;	98US-0097188.
QY	241 EGNAKTTGGAAICNTKAAGSPEELIISNKTLIRASVNAFTSGGAIAHAKKLALSSGGTEF	300	XX	PR	20-AUG-1998;	98US-0097189.
Db	262 egnakttggaaicntkaagspeelisnkltifaasnvaetsggihakklaissggftef	321.	XX	PR	20-AUG-1998;	98US-0097190.
QY	301 LRVNVSATPKGGAAISDASGELSAAETGNITPFRVNLTGTDTPKRNAINTGSNGK	360	XX	PR	20-AUG-1998;	98US-0097195.
Db	322 lrvnvsatpkggaaisdasgelsaaetgnitfrvnltttsdtpkrnaingsgpk	381	XX	PR	27-AUG-1998;	98US-0097197.
Db	(CONN-) CONNAUGHT LAB LTD.		PA	17-AUG-1999;	99US-0376770.	
QY	361 FTERAAKNTTIFYDPITSEGTSVDLIRINGGAGAUNPYQGMILFSGETLTADELKYA	420	XX	PT	Novel antigens and corresponding DNA molecules that can be used to prevent, treat and diagnose disease caused by Chlamydia infection in mammals, especially humans -	Murdin AD, Oomen RP;
Db	382 fterraaknttifydpitsegtsvdvliringsagaunpyqgmlfsgetladelkva	441.	XX	PT	WPI: 2000-224703/19.	N-PSDB; AAZ61509.
QY	421 DNKSSERFOPVSPSLGGKLIQKCVTLESTSFSEQFASGLJGMDSCTTILSTTAGSITITNLG	480	XX	PT	Claim 19; Fig 15-E; 201pp; English.	XX
Db	442 dnksserfopvpslsgkliqkvttlestsfseqasglqmdscttstagsttlnq	501.	XX	PT	AAY69362-69 represent Chlamydia pneumoniae polypeptides. The polypeptides are present in the bacterial membrane structure, in the external vicinity of the membrane structure, in the inclusion membrane structure, in the external vicinity of the inclusion membrane structure, and in the cytoplasm of the infected cell. The polypeptides may be used to prevent, treat and detect the presence of Chlamydia infection and/or the presence of Chlamydia in a sample. The polypeptides may also be used to induce an immune response in a mammal. The vaccine vector comprising the polynucleotides is used to induce an immune response in a mammal. Antibodies directed against the polypeptides may also be used therapeutically to treat and/or prevent a Chlamydia infection.	XX
QY	481 INVDIGLKQPVSTATAKGASKNKVTVSGKLNLDLEGNIYEHMSHDLQFLSLKIKTVDA	540	XX	PT	XX	
Db	502 invdiglkqpvtatakgasknkvtsqasglqmdsctttagsttlnq	561.	XX	PS	CC	
QY	541 VDINVDISLIPVPAEDPNESEYGFQGMVNNTDTAINTKEATATWTKTGFPVSPERKS	600	XX	PS	CC	
Db	562 vdinvdisslpvpaedpneseyfqgqgnvnwttdtaintkeatwtktgfpvspers	621.	XX	PS	CC	
QY	601 ALVCTNTLNGFEDIRSLQQLVEIGATGMHKQEFWSSMTNEHLKTCGDNRK&FRTSGC	660	XX	PS	CC	
Db	622 alvctntlgfwfdirsllqqlveigatgmhkqefwssmtnfhtktgdernrkfrhtsgg	681.	XX	PS	CC	
QY	661 YVIGSAHTPKDDIFTEARCHLARDKOCFIAHNSRUYGGTLEFKHSHTLQPNYRLUG	720	XX	PS	CC	
Db	682 yyigsahtpkddiftearchlardkocfiahnssryggflefkhshtlqpnryrlug	741	XX	PS	CC	
QY	721 RAKFSEASEATEKPREIPLADYQVSFSHSDNRMETHYSLPESGSWSNECIAGGIGLDL	780	XX	PS	Sequence 918 AA;	Score 1862; DB 21; Length 918;
Db	742 rafkseaseatekpreipladysfsfsdnrmethyctsipesgswneneiciaggigldl	801.	XX	PS	Best Local Similarity 42.3%; Pred No. 3.3e-117; Mismatches 352; Indels 34; Gaps 12.	Query Match 398; Conservative 156; MisMatches 352; Indels 34; Gaps 12.
QY	781 PFLVLSNPHPLFKTFIQPKMVEMVYQSONISFEFESSSDGRCFSIGBLINISIPIVAKFVQCD	840	QY	1 MTKSIPWVLYSSVLAFCSHLQSL---ANEELLSPDDSFNGNIDSQGTPMPK-----TSAT	52	
Db	802 pflvlsnphplfktfiqpkmvemvysqnfesssdgrcfsigblinisiipivakfvqcd	861.	Db	1 mrsfsfllissllaflpl-msvsadaadltqsrdsyngdtssttefpkaatsdasqgt	59	
QY	841 IGDSTYTDLSGFFRSVDSYTRNNPOSTATLYMSPDWSWKIRGNLSPQAFLLRGSNNVVYNSN	900	QY	53 YSLTGDVFFYEPGKGPPLSDCEKFQTDNLTFIQLGHSLSLTFGPIDAGTHAGAASTTANK	112	
Db	862 1gdsytodlsgrffsvdsytrnnpostatlymspdwswkirkgnlspqaflrrgsnnvvynsn	921	Db	60 yildgavsisqgkqtsfsntgntfifqngfslhdniisstvaygvvvsntaas	119	
QY	901 CEFGHYAMELGCSRNYNDVGTKLRF	928	QY	113 NLT-FSGFSLLSFDSSPSTVTTGQGLTLSAGGVNLNIKLVVAGNESTADGGAIKGAS	171	
Db	922 ceifghyamelgcsrnnyndvgtklrf	949	Db	120 gitkfgfslrmlaapr--rttgkqaikitqgvlvsigndinenasengaintkt	176	
QY	RESULT 4		QY	122 LSNNKFLYFEGNAAKTGTGATCNCNTRASGSP--LIISNNKTKLIFASNVTETSGCAIAHAK	289	
ID	AY69369		Db	172 FLLTGTSGDAFLPSNNSSSTKGGAIATAGARANNTGYVRFLSIASIISGGTADDEGTIS	231	
XX	AY69369 standard; Protein: 918 AA.		Db	177 lsltgstrfravflqgnssqqgaiyasgdsvisenagilsgnnnsatssggaisaegnl	236	
AC	Amino acid sequence of the CPN100395 polypeptide.		QY	290 LAISSLG-GFTFRLRNVNSSTAPKGGALISIDASGELSSETGNTIYRNTLTTGSDTDP	408	
XX	CPN100395: Chlamydia infection; immune response; vaccine.		Db	297 lvlsrggylfsmnkaapkgkgaiailsgseisadsigniifeqntstsgpsa	356	
OS	Chlamydia pneumoniae.		QY	349 KRAINIGNSKRFTELRRAKNTIFFYDPITSEGTSDDVLKINNNSGAGALNPQGTILFS	408	
XX	W0200011183-A2.		Db	357 tmaidlasnakflnratrgnkvifypdtssg-atdklsinkadsgsntgyeygvfvs	415	
PN	02-MAR-2000.		QY	409 GETLDAEFLKADNLKSSFTOPVLSLGGKLLQGYTLESTSFQEAGSLLGMDSGTTS	468	



Qy	701	GTLFFKHSHTLQFQNYLRGLRAKFSESAIEKKPREIPLAQLDVQVSFSHSDNRMETHYTS	760	CC which are possibly associated with C. pneumoniae.
Db	708	gtlyqnet----yis1-peklrposlsvypteplvfgnlsrthndlktyty	761	XX SQ Sequence 928 AA;
Qy	761	PESEGWSNECIAAGGIGDLDFPLVLSNPHPLKTFIPOMKVENMVYSONSFESSSSDGRGF	820	Query Match 38.7%; Score 1853; DB 20; Length 928;
Db	762	ptxgswndsfalefgrapicl-desalfeqmpfmklqfvyahgeqfkeqtearef	820	Best Local Similarity 42.6%; Pred. No. 1.3e-16; Mismatches 332; Indels 42; Gaps 20; Matches 404; Conservative 171; MisMatches 332;
Qy	821	SICRGSLTISIPIYGAKF-VQGDIGDSYTDLSCEFYSDYRNPNQPOSTATLYNSPDSKIRG	879	Qy 1 MTKSIPWLVSSVLAFTSCHIQLQSLANBELLSDDDSEFGNTISGTEPKTS---ARTYSLT 56
Db	821	gsrrivnaiplqirfakescdqa-tynt1qiytvdlvrspdcfttirisgdwktfg	879	Db 1 mksxfpkfrfsufaifp--limiateividssasfsgn-kgngnvsresgedagttiyfk 57
Qy	880	GNUSROAFLURGSNNYYNSNCLEGHYAMELRGSSRNYNDVGTKLRF	928	Qy 57 GDVFIFYE-PGKGTPPLSDSCFKQTDDNLFLTGNGHSLSITFGIDAGTHAGAA-STANKNL 114
Db	880	trilargalvrlvragnhfcfnstneafsqfsfeirgssrrnyndlgakyqf	928	Db 58 gnvtlenipggtalitkscfntkqalgltffqngnsllfqtvqagaavnnssyvdsk 117
<b>RESULT 6</b>				
ID	AAB88421	standard; Protein; 928 AA.		Qy 115 TFSGFSLLSFDSSPSTVTVTCGTTLS-SAGGYNLNENIRKLVAGNFNSTADGAIKGASF 173
AC	AAC88421:			Db 118 tfigfslsfiaspgsitsitkgavscostsglsfkdnvslfsknfstddggaitaktls 177
XX	XX			Qy 174 LTGTSODALFSSNNSSSTKGGATATTAGARTANNTGYVRFELNIASTSGGALDDECGTSILS 233
XX	XX			Db 178 ltgtmsalfsntsfkkgqgqtsdalitlgngqngfsatssgaafteasvts 237
XX	XX			Qy 234 NNKEKF---EGNAAKTT---GGAICNTKAGSPPELLISNNKTLLIFASNVAAETSGGA 284
DE	Chlamydia pneumoniae surface exposed protein Omp8.			Db 238 onakvsfdikvtgasssstlgdmsgaicayktsctdtkvrltgnqmlflmnntsttaga 297
XX	KW	Outer membrane protein B; surface exposed protein; antigen; infection; diagnosis; vaccine; atherosclerosis; asthma.		Qy 285 IHAKLIALSSCGFTPLRNVNSSAT-PKGGAISIDASGEJSLSAETGNITFVRNNULTG 343
XX	KW			Db 298 iyvkrelasggltfirsrsynngtakpggaiadesgejslsadsqdirflgntvtst- 356
XX	OS			Qy 344 STDTPERNANITGSNCKETRAAKNHTIFPDPT---SCTSTDPLVKINGNSAGALNPY 401
PN	W0888933-A2.			Db 357 -tpgtarsslgtskmtalsagrairyfydpitgstsstvtvknvpetaqlq 415
XX	30-DEC-1998.			Qy 402 QGTILFSGETLTADELKVAONLKSSTQPPYLSGSKILLQKGVTLESTSSSQEAGSSLGM 461
PD				Db 416 tgniliftgekiseteadsknltsklqpvltsgqtlslrhgtqfqaqdslrem 475
XX	19-JUN-1998;	98KO-DK002666.		Qy 462 DSGTMLUSTRASITINNLGIVDLSLGKQPVSLTAKGASHKVVTKVSGKLNLIDIEGNIVES 521
PF				Db 476 dvgtle-padstinnlnvlinnisiidgakakietkatsknltsgtldptgtfyen 534
XX	23-JUN-1997;	97DK-0000744.		Qy 522 HMFSHPQLFSLKITYDADVDNSSLLPVPAEDPNSEYQFOQCN-WNWTDTATN 580
PR				Db 535 hs1rnqsydilelkasgtvs---tavrpdpimgekfnyqgqtwgpiwgtgast- 589
XX	(BIRK/)	BIRKELUND S.		Qy 581 KEATAFWTKGTFVPSPERKSALVCNTLWQGETDIRSLQOLVEIGATGMENHKOFWVSSMT 640
PA	(CHRI/)	CHRISTIANSEN G.		Db 590 --atfnwtktiyipperigslvpsnlwnaidishyimetaneqlgpdrafcwags 647
XX	Birkelund S,	Christiansen G,	Knudsen K,	Qy 641 NFLHTKGDENRKGFRTSGVIGGSAHTPKDLDFTAFCHLFARDKDCTIAHNNSRTYG 700
PI			Madsen A;	Db 648 nnfhkdstktrgfzrlsgyyvggnlhtcsdklisaafcqglgrdrdytvakingtvyg 707
P1				Qy 701 GTLFHRHSHTLQPQNTLRLGAKFSEASATFPREIPLAQLDVQVSFSHSDNRMETHYTS 760
XX	Mygind P;			Db 708 gtllyvhnet---yis1-pck1rpscslsyvpteipvifsgnlsythcndlktkyty 761
DR	WPI; 1999-105610/09.			Qy 761 PESEGWSNECIAAGGIGDLDFPLVLSNPHPLKTFIPQMVKEMTVYQSNSFEFESSSDGRGP 820
DR	N-PSDB;	AAX06820.		Db 762 ptvkgwgnodaleffggrpicl-desaefeqymfrmk-lqryvahgeqfkeegtearef 820
XX				Qy 821 SIGRLNLISPVGAKF-VQGDIGDSYTDLSGFFVSDVYRNPOSTATLWMSPDWKIRG 879
PT	Species-specific test for identifying mammals infected with chlamydia pneumoniae - comprises detecting antibodies specific for outer membrane proteins of C. pneumoniae or nucleic acids encoding these proteins			Db 821 gssrvivnlaipiqrifdkesdcqda-tun1qytgvdivsnpadttlrisqdwktfg 879
PT	XX			Qy 880 GNLSROAFLURGSNNVYNSNCLEGHYAMELRGSSRNNWDVGTKLRF 928
PT	XX			Db 880 tlrlgalvrlvragnhfcfnsearsqsfstelrgsrnyndgakyqf 928

RESULT	7	Qy	113	NLT-FSGFULLSPDSSPSTVTTGGTLDSSAGVNLENTRKLVAGNFSTADGAIKGAS	171
AANR8422	standard; Protein: 918 AA.	Db	120	91kfgfslrlmaap--trgkaikitdlviesignlqenassengaintkt	176
ID	AANR8422;	Qy	1172	FLLTGSGDALFSNNSSTSFGGAATTACARIANNTGYVREFLNASTSGGADDEGTSI	231
AC		Db	117	1stgstrvafqngssqggalayasodvisenaglsfgmnsatsggalsaeqnlv	236
XX		Qy	232	LISNNKEYLEGNAAKTTGGCACTNKGASPE-LIISNNKTLIFASVNTAETSGGAIHAK	289
DT	26-APR-1999 (first entry)	Db	237	isnqnifdgckattingaidenkqanpdpltsngeslhlnntaqnsgaiyuk	296
XX	Chlamydia pneumoniae surface exposed protein Omp9.	Qy	290	LAASSG-GTEFLERNVYSSATPGKAISTADGELSLSAETGNITFVRNTLTTGSDTP	348
DE	Omp9; outer membrane protein 9; surface exposed protein; antigen; infection; diagnosis; vaccine; atherosclerosis; asthma.	Db	297	lvissgr9yvlfsnnkaanatpggialldseisidaqlngifegnttstgspav	356
XX	Chlamydia pneumoniae.	Db	297	lvissgr9yvlfsnnkaanatpggialldseisidaqlngifegnttstgspav	356
XX	W0988953-A2.	Qy	349	KRNAINIGNGKTELRAKHNPIFFYDPITSEGTSVDLKINGSSAGALNPYQGTTFS	408
XX		Db	357	trnaldiansnakfiniratrgnkvifypitgg-acatklsinkadsgnytegyivfs	415
PD	30-DEC-1998.	Qy	409	GENLTADFLKVADNLKKSFTQPVLSGGKKLLOKGVTLESTSFSQEAGSLLGMDSCTLS	468
XX		Db	416	geklseeelkkpnlksttqvaleaglavlkdgvtvrvantitqeqsvkvndggfffe	475
PF	19-JUN-1998; 98WO-DK00266.	Qy	469	TTAGSITITNLGINVDSLGLKQPVSLTAKGASKKTVTSGKLNLIDENNTYESHMFSDHQ	528
XX		Db	476	assegtvnglaninidsdgtntkaiikataasdkvadsgpmiydagnyyeyehnlsqqq	535
PR	23-JUN-1997; 97DK-0000744.	Qy	529	LFSLLIKIVDADYDNTVDDISLIPVPAEDPNSEYGFQOCQWNWMTDATNTKEATATWT	588
XX	(BIRK/ BIRKELUND S. (CHRI/ CHRISTIANSEN G.	Db	536	vfpieisaqgtmttdipd--tpilntthhygggti-kwvddatataknatitwt	591
PA	Birkelund S, Christiansen G, Knudsen K, Madssen A; Mygind P;	Qy	589	KTGIVPSPERKSALVCNTLWGVFTDIRSIQOLIVEIGAMEHKGFWVS-SMTNFHLHTGDD	648
PI	WPI: 1999-105610/09.	Db	592	ktykpnpberqpgplvpnsawgsfvdrvs1qsindrstsissstnlwsgiadflhedqk	651
XX		Qy	649	ENRKGERHTSGGGIVIGGSAAHTPKDCLFLFACHLFDKDCFAHNNNSRTYGTTLFFKHS	708
DR	N-PSDB; AAX06821.	Db	652	gnqrssyrhsaqaqyqggftasenfniafcqfkgydkhavnhhyqamsyhr-	710
XX	Species-specific test for identifying mammals infected with Chlamydia pneumoniae - comprises detecting antibodies specific for outer membrane proteins of C. pneumoniae or nucleic acids encoding these proteins	Qy	709	HTLQPNYIYRLGRKFSEAEKEPREIFLFLDVQVSFSHSDNRMETHYTSILPESEGWS	768
PT	Claim 7: Page 56-58; 115PP; English.	Db	711	-----lgesktlakilsqnsds.pfvfnarfaqhtdnmttkytgspvkswg	760
PT	This polypeptide comprises the novel 96.7 kDa surface exposed protein Omp9 of the human respiratory pathogen Chlamydia pneumoniae. Its amino acid sequence was deduced from DNA (see AAX06821) isolated from C. pneumoniae expression library. The invention provides 12 novel surface exposed Proteins, Omp4-Omp15 (see AAX06817-28). A new species specific test is claimed that is used to identify mammals (including humans) infected with Chlamydia pneumoniae. The test comprises detecting antibodies specific for C. pneumoniae. The test can also be used in the immunization of mammals, the nucleic acids being particularly useful as DNA vaccines for effecting in vivo expression of antigens. The vaccines may also prevent atherosclerosis and bronchial asthma, which are possibly associated with C. pneumoniae.	Qy	769	NECIAJGGICLDLPLFPVLSNPHLFKTFIPOMKVERVYVSONSFESSSSDORGFSIGRLNL	828
PT	CC	Db	761	ndaf9iegcaipvrasgrswdthtpflnemiyahqdfkqydkdhavnhhyqamsyhr-	820
PT	CC	Qy	829	SIPYGAKEWVQGDIGDSYTDLSGGFVPSDYVRNNPOSTATVMSPDMSWKRGGNLRSQAFL	888
PT	CC	Db	821	avpgiktek--fsdkstkydssayavpivrdppctlmvgdwstcgtsisrgal	878
PT	CC	Qy	889	LRGSNNTYYVNSNCLEFGHYAMELRGSSRNNYNDVGTKLRF	928
PT	CC	Db	879	vragnhhatasntevfsqtevelrgssrsyalddggrgf	918
PS	XX	RESULT	8		
PS	XX	ID	AANR8423		
PS	XX	AC	AANR8423;		
PS	XX	XX	AANR8423;		
PS	XX	XX	26-APR-1999 (first entry)		
PS	XX	DE	Chlamydia pneumoniae surface exposed protein Omp10.		
PS	XX	KW	Omp10; outer membrane protein 10; surface exposed protein; antigen; infection; diagnosis; vaccine; atherosclerosis; asthma.		
PS	XX	KW	Chlamydia pneumoniae.		
PS	XX	OS	Chlamydia pneumoniae.		
PS	XX	PN	WO988953-A2.		
Sequence	918 AA;				
Query Match	38.4%;	Score	1836;	DB 20;	Length 918;
Best Local Similarity	42.1%;	Pred.	No. 1.8e-11;		
Matches	316; Conservative	155; Mismatches	355; Indels	34; Gaps	12;
Qy	1 MKTGTGIVPWLVSSYLAFLSCHLQLSD--ANBELSPDDSENGNTISGTFIPK---TSATT	52			
Db	1 mrsfsllisslafl-lmsvsadaadtlsrsdyngstssteftpkaaatsdasgtt	59			
Qy	53 YSTGTGIVPWFYEPKGTPLPSDSCFKQTDNLTFNGHSLTFFIDACTHAGAAASTANK	112			
Db	60 yldgdvsiqajkqtsittscisntagnltfngfslhfanisstvagvvvntaas	119			



DR N-PSDB; AAA30851, AAA30852.  
 XX Nucleic acids encoding polypeptide antigens from Chlamydia useful for preventing, diagnosing and treating diseases such as community acquired pneumonia, bronchitis, sinusitis and asthmatic bronchitis, adult-onset asthma -  
 XX PS Claim 16; Fig 5; 174pp; English.  
 XX This sequence is a Chlamydia antigen of the invention, designated CPN10638. The nucleic acids (and their complementary sequences) may be used as diagnostic agents for detecting the presence of nucleic acids encoding Chlamydia antigens in samples according to standard methods, and therefore, for diagnosing Chlamydia infections. For example, they may be used as primers and probes for diagnostic polymerase chain reaction (PCR) assays. Antisense sequences may be used to down regulate expression of the proteins and may be used to treat infections. The nucleic acids may also be used to produce the protein antigens they encode according to standard recombinant DNA methodologies. The proteins may then be used as antigens for the production of antibodies (i.e. as vaccines), for preventing infection by Chlamydia. The antibodies may also be used as diagnostic reagents for detecting infections. Chlamydia is a pathogen implicated in the development of disease (for example) community acquired pneumonia, upper respiratory tract disease (especially bronchitis and sinusitis, asthmatic bronchitis, adult-onset asthma and acute exacerbations of asthma in adults.

SQ Sequence 928 AA:

Query Match 37.4%; Score 1787; DB 21; Length 928;  
 Best Local Similarity 42.7%; Pred. No. 3.8e-112; Gaps 17;  
 Matches 404; Conservative 151; Mismatches 354; Indels 38; Gaps 17;

Qy 1 METSIPWLVSSLAFSCHLQ ---SLANEPLSDSFNGNTDSGNTP----KISAT 51  
 Db 1 myslhwflisslaplslnsfaaveinlqptifsg --pgtytppaqqtadgt 57

Qy 52 TYSLTGDFYYERGKGTPSLSDSCFKOFTDNLTEFLGNHSLPFGTIDAGTHAGAASTAN 111  
 Db 58 lysnltgdsithagsptlitasfcftgnfqf1qniadganc-tftntaan 116

Qy 112 KNEFTFSGFSLLSFLSSPSTPTVYQGQTLSSAGGVNLENIRKLVVAGNFSTATDGGAIKGAS 171  
 Db 117 klfisfsysyli--iqtnnattgtgakstacsnsnscy fgrfnfsndnqgalqss 174

Qy 172 FLITGTSGDALEFSNNSSSTKGGAIATTAGARANNTGYVRFLSNIASTSGGAIIDBTSI 231  
 Db 175 isls-lpnlnltaknktqkgalystsggitintlnsasfeentaaannggaiyteassf 233

Qy 232 LSNINKFLYEGN --AAKTTGGAI-CNTKASGSPELITSNKTLIFASNVAEATGGATHA 287  
 Db 234 dnvlvssqpt,kfnngsqydtapqslqiaiadsqsislisaqdqagnpayq 293

Qy 288 KKLALSSGGFTETFLRNN -VSSATPKGGAISIDASGELSLSAETGNITFVRNLT-TGST 345  
 Db 294 dnvlvssqpt,kfnngsqydtapqslqiaiadsqsislisaqdqagnpayq 353

Qy 346 DPKRKAINIG-SNGKTELRAKNTHTFYDPITSECTS -SDVKINNGAGALNPYQ 402  
 Db 354 qtttrsninqntnakivqlrsgqntiyfcdpittsitaalsdalnqdpagnpayq 413

Qy 403 GRILFSGETLTADELYKADNUKLSSETOPVSLSGKLUOKGYTLESTSEOFAGSLIGMD 462  
 Db 414 gtvfsgkiseaeadnksstiqptitqqlqslksgrlvaksqspstllmd 473

Qy 463 SCTLSTPAGSITITNLGINVDSGLKQPVSUTAKGASNKVIVSGKLNLDIEGNIYESH 522  
 Db 474 agtiteadq-itimnlivnvsilketkgtktatqasqtvrlsqsgsnyedy 532

Qy 523 MFSHDQLESLLKTVADVDVTNWDDISLIPVPAEDPNSEYXFGQQWNWTFDTAINTKE 582  
 Db 533 swnpqyfscitl--addpanhitdlaadpleknpihwgryqgnwalswqedtatska 590

Qy 583 ATATWTKIGFVFPSPERKSALVCNTLWGVFTDIRSLOOLVEIGATGMEMHKOGFWVSSMTNF 642  
 Db 591 atitwtkigynprerpertgylvantilwsfvdvrsiqqvathvkrqsgtetrwcegsnf 650

Qy 643 LHKTGDEMRKGFRHTSGGYVIGGSAHPKDKDFFIAHNSRPTYGGT 702  
 Db 651 fkdstkinkgrhisiqyyvgattlasdnlttaafcqfkgdrdhfinknrasayaas 710

CC 703 LPFKSHSTLPQONYLRGRAKSEATEKFPRPREPLADQVSFHSNDRMETHYTSLPE 762  
 Db 711 lhqlhlatsspslly -1pgs----eqvifdaqisyksntmktytqapk 761

Qy 763 SEGSWSNECIAAGGIGLDLFVLSNPHPLFKTPQMKVEMYVQSNSFESSD-GRGFSS 821  
 Db 762 geswyndgcalelasslphtalsheglhayfpfikeyasyihqdfkernittlvrssfd 821

Qy 822 IGRULNLSTIPVGAKFVQGDSYTYDLSGFFVSDYVRNNPQSTATLYMSPDSWKIRGGN 881  
 Db 822 sqdinvspsqigitfersnerasyeatvdyadvyrknpacttailnnswkttgtm 881

Qy 882 LSROAFLRLGSNNVVYNSNCNELEGHYAMELRESSSRNNYDVGTKLRF 928  
 Db 882 lsrqagigragifyafspnlevtssrnsmiergssrsrnadlgqkfqf 928

RESULT 10  
 ID AAM88418 standard; Protein; 928 AA.  
 XX  
 AC AAM88418;  
 DT 26-APR-1999 (first entry)  
 DE Chlamydia pneumoniae surface exposed protein Omp5.  
 KW Omp5; outer membrane protein 5; surface exposed protein; antigen; infection; diagnosis; vaccine; atherosclerosis; asthma.  
 OS Chlamydia pneumoniae.  
 PN WO9858953-A2.  
 XX  
 PA (BIRK/ ) BIRKEUND S.  
 (CHR/ ) CHRISTIANSEN G.  
 DD 30-DEC-1998.  
 XX  
 PF 19-JUN-1998; 98WO-DR00266.  
 XX  
 PR 23-JUN-1997; 97DK-0000744.  
 XX  
 PA (BIRK/ ) BIRKEUND S.  
 (CHR/ ) CHRISTIANSEN G.  
 DR N-PSDB; AAX06817.  
 XX  
 PT Species-specific test for identifying mammals infected with Chlamydia pneumoniae - comprises detecting antibodies specific for outer membrane proteins of C. pneumoniae or nucleic acids encoding these proteins  
 XX  
 PT  
 CC This polypeptide comprises the novel 97.2 kDa surface exposed protein Omp5 of the human respiratory pathogen Chlamydia pneumoniae. Its amino acid sequence was deduced from DNA (see AAX06817) isolated from a C. pneumoniae expression library. The invention provides 12 novel surface exposed proteins, Omp4-Omp15 (see AAW8417-28), and nucleic acid sequences encoding them (see AAX06816-27). A new species specific test is claimed that is used to identify mammals (including humans) infected with Chlamydia pneumoniae.

PS Claim 7; Page 43-45; 115pp; English.

pneumoniae. The test comprises detecting antibodies specific for Cmp4-omp15 or detecting nucleic acid fragments encoding these outer membrane proteins, especially by PCR. The proteins are also used in the diagnosis of *C. pneumoniae* infection in mammals. The nucleic acids and proteins can also be used in the immunization of mammals, the nucleic acids being particularly useful as DNA vaccines for effecting in vivo expression of antigens. The vaccines may also prevent atherosclerosis and bronchial asthma, which are possibly associated with *C. pneumoniae*.

Db	119	lttgtfsnlsfitapgttvagstlssagalmldngtlfsgnvsneannngaitak	178	PD	03-JUN-1999.
QY	171	SFLITGTSGDAIFLSNNSSSSTKGGAIATTAGARIANNGYVVRFLSNIASSTSGGAIDDEGTS	230	XX	
Db	179	tlsisgnssititsttsnsakkigaiyssaaasiisqntcqvlmninkgetggalgfass	238	PF	20-NOV-1998;
QY	231	ILSNNKFLYEGNAKTT -GCAICNTKASGGPELIIISNNKTLIFISVAETSGGATHA	287	XX	98MO-IB01890.
Db	239	sitgnssifffsqtatdaaqgkqgaiycektptutsgnsltfngttsqggica	298	PR	04-NOV-1998;
QY	288	KKALSSCGFTEFLRNW -SSAPKGGAISIDSAGELSLSAEINTFVNRLTITGSTD	346	XX	98US-0107078.
Db	299	hg.dlsaaapt1fsmmrqgntaaqkggaiiaidsgsislsaaqdtifglftst-sap	357	XX	21-NOV-1997;
QY	347	TPKRNAINTGSNGKETELRAAKHTIFFYDPTSEGT -SSDVLKINGNSAGALNPYCGTI	405	XX	97FR-0014673.
Db	358	tstralygsskitnraaqgsiydplasntgasadvitngpdnsnpldysgti	417	XX	(GEST ) GENSET .
QY	406	LRFSEGTIAADELKVDANLKSSTQPSLSSGGKKLILQGYTESTSFSQEAGSLIGMDSGT	465	CC	Genome sequence of Chlamydia pneumoniae
Db	418	vsgekisadeataadnftsllklqlalaqstalknveqndqfgeqtdllmepgt	477	CC	Page 942-944; Disclosure: 1912pp; English.
QY	466	TLSSTAGSITINMGINVDLSIGKQPVSLATAKGSNKVIVSGKLNLIDIEGNTYESIMFS	525	CC	AAY34584-Y35879 represent the proteins encoded by all the open reading frames in the complete genome (see AAX91990) of Chlamydia pneumoniae.
Db	478	kkadteaisltlvvdialsqenkssietganktitltsplyfdgssgnfyeshti-	536	CC	C. pneumoniae causes respiratory disease such as pneumonia and bronchitis and is thought to be a contributing factor in heart disease, sarcoidosis, sinusitis, purulent otitis media, erythema nodosum or pharyngitis. The polypeptides encoded by the open reading frames of the C. pneumoniae genome (see AAU34584-Y35879) can be used in immunogenic compositions as vaccines. Vectors containing C. pneumoniae nucleotides sequences can also be used as immunogenic compositions, especially where the vector directs the expression of a neutralising epitope of C. pneumoniae.
QY	526	HDLFLSL-LKIRWADYDVTNVDISSLIPVPAENPNSEYGFQOCQWNVNWTTDTATNTKEAT	584	CC	WPI, 1999-357842/30.
Db	537	-nchftqp!vvfttaatasdiydalitspvqpephygqgnweatw-adst-aksgt	593	CC	DR
SQ				XX	WPI, 1999-357842/30.
QY	585	ATPKTKGEVPSPRKSAVCNTLNGFTDIRSLQVLVEIGANGMEHQGFVWSMTNFHL	644	SQ	Sequence 927 AA;
Db	594	mtrvttgyopnperrarsvpdsiwashtdrltqqlwsqtaffh	653		
QY	645	KRQDENRKGFRTRSGGYTGGSSAHTPKDLMFAFCFLFARDCFCAHNNSRTGYCGLF	704		
Db	654	kdksqtnqafrrnkyiyvgssadefsnenfsrafqclfgdkdlfventshnylyss 713			
QY	705	FKHSHTLQPOQNYLRLGRAKEFSESAIEKFPREIPLADYQVSFSHSDNRMETHYTSPESE	764	QY	1 MRTSIPWVWLQSSSYLAFLSCHLQ---SLLANEELSPDDSFNGNIDSGFTTPP---KTSAT 51
Db	714	1ghrafqg----g1pmplsgrtsdmklpidinaqsytsytkndmdtrytsbeaq	766	Db	1 mksblhwflsllsllplnsfaaveinlgptsfsq---pgtbyoppagttnadgt 57
QY	765	GWSNECTAGGIGCLDLPFVLSNPHPLFKTFIOPDMKVMVYVSONSFESSSDORGFSIGR	824	QY	52 TSLTGDVFYEPGKGTPUSLSCRQFTDNLTFQNGHSLTFRIDACTHAGAAASTAN 111
Db	767	gwtwnngalelgssialylpkeapfqcqyfprikavysrqntkesgaraafdg	826	Db	58 iynltdqdrstnqsgspaltafcKettgnlsfqghyyqflqnidaganc-tftntaan 116
QY	825	LLNLSIPIVGAKEVQGDGDSYYDTSVYRNPQSTATLVMSPDSWKTRGGNLSR	884	QY	112 KNLTFSGSFSLSDPSSPSTVTRGQGTLSSAGAVNLNTRKLVAGNFSTADGAIKAS 171
Db	827	lyrcspvgirleiskeidekanfeislayigvyrkprsrstslmvsaswtslkolar	886	Db	117 kllsfsgfsyis1-1gttnatqgkastgcidsnsyvcfgqnfndngalgss 174
QY	885	QAFLRLRGNNVVVNSNCLEFGHAMELRGSSRYNNDVGTDRF	928	QY	172 FILTGTSQDALFSNNSSSSTKGGAIATTAGARIANNTGVRFLNSIASSTGGADDECTSI 231
Db	887	qarilasagshtltspvhelsgeaaeyeirgsahinvcgrysf	930	Db	175 is1-is1-lpnlttaknkakqggalysteggtitlnsasfntsaaanggalyteassf 233
QY	828	KKIALSSGGCTEPLRNN-VSSATPKGGALSIDASGEUSLSAETGNTIVFRNLT-TGST	345	QY	232 LSNNKFLYFEGN --AAKTTGGAI-CNTKAGSPPELLIISNNKTLIFASNVTAETSGGAIHA 287
Db	294	dnlvlssopt1fknnssidtaaplggaiiadsgs1s1algdgitfeqntvvkgasss	353	Db	234 isskaifinnsvtsatsqgaiycstsapskpvtlsingeinfigntaitsggalyt 293
QY	346	DTPKRNAINTG-SNGKFLYDPTSECTS -SDVLKINGNSAGALNPYO 402			
Db	354	qtttrnsnignnnakvqrasqgnlyfyobittsitaalsdainingpdagnpayq	413		
QY	403	GTILFSGETLDAELKVDNLKSSFTQPSLSSGGKLLQKGVTLESTSFSQERASLIGMD 462			
Db	414	qtlvfgskleseaadnlkstiqpltiaggqlksqgvlvaksfsgspgstlm 473			
QY	463	SGTTLSTTAGSITINLGSVNDLGLKOPVSUTAKGASNKVTVSGKLNLDIEGNTYESH 522			
Db	474	agtletddgsisi--icsqrclfrdeextikatqsgsctvtsgs1svdpsgnyedv	531		
QY	523	MFSHDQFLPSLLKTVTDADYDTNVDISSLIPVPAEDPNSEYGFQGQWNVNTWTDTATNTKE	582		

RESULT 12

AAV35054 standard; Protein: 927 AA.

XX

AC

XX

13-SEP-1999 (first entry)

Chlamydia pneumoniae surface exposed polypeptide.

XX Respiratory disease; pneumonia; bronchitis; heart disease; sarcoidosis; sinusitis; Purulent otitis media; erythema nodosum; pharyngitis; vaccine; neutralising epitope.

XX Chlamydia pneumoniae.

OS Chlamydia pneumoniae.

PN W09927105-A2.

Db 532 swmpqyfscitl--addpanihitdaadplexnpihyqgnwaiswgedtakkska 589  
 QY 583 ATATWTTGTYFVSPERSKSAVNTLNGVFTD1RS1QOLVEIGATGMEMHKGRFWSSMTNF 642  
 Db 590 atltwtktgynpnpergrtgvtalnwfsfvdrsqiqvlatkvrsqsetgwiwcegisnf 649  
 QY 643 LHKTGDNRKGRHTSGGYVGGSAHTPKDDLETFARCHLFARDKDCTFIAHNNSDYGGT 702  
 Db 650 flikdstinkfrhisagyvrgattlasdnlttafcq1fqkdrdhfinknrayaaas 709  
 QY 703 LFFKHSHTLQPOONYLRGRAKESAEIAKEPPIALDYQVSFSHSDNRMETHYTSLPE 762  
 Db 710 hnhqlatisspslry--lpsses-----eqpvlfdaqisyisysknmktyttcqapk 760  
 QY 763 SEGWSWSNECIAAGGIGLDLPFWLSPNPHPLEKTIPQMKVENVYVSQNSFEFESSD GRGFS 821  
 Db 761 geswijnsgcaellasslphthalshqfhayfptkveasyihdsfkerntlyvrsfd 820  
 QY 822 IGRLLNLSIPVGAEVQGDICPSYTDLSGFPSDVYRNNFQSTATLVMSPDSWIRGGN 881  
 Db 821 sgdlivnsvpvgitffersnreasyatlyvadryrkpdcttallintswkttgtn 880  
 QY 882 LSQAFLRLRGSNYYVNSRNLYVNSCEFLGHYAMELRSRNYNDVGTKLRF 928  
 Db 881 lsraqigragifyafspnlevtsnlsmiegrsrsynadggkf 927

RESULT 13  
 AAY90237 standard; Protein: 928 AA.  
 XX  
 AC AAY90237;  
 XX 29-AUG-2000 (first entry)  
 DE Chlamydia antigen CPN100635.  
 KW Chlamydia antigen; diagnosis; infection; community acquired pneumonia;  
 KW respiratory tract disease; bronchitis; sinusitis;  
 KW asthmatic bronchitis; adult-onset asthma; acute exacerbations of asthma.  
 OS Chlamydia pneumoniae.  
 Key Location/Qualifiers  
 Peptide 1.43  
 /note= "signal peptide"  
 Protein 44..928  
 /note= "mature CPN100635"  
 XX W0200032794-A2.  
 XX 08-JUN-2000.  
 XX 01-DEC-1999; 99WO-CA011147.  
 PR 01-DEC-1998; 98US-0110349.  
 PR 01-DEC-1998; 98US-0110340.  
 PR 01-DEC-1998; 98US-0110427.  
 PR 01-DEC-1998; 98US-0110428.  
 PR 01-DEC-1998; 98US-0110438.  
 PA (CONN-) CONNAUGHT LAB LTD.  
 XX Murdin AD, Oomen RP, Wang J;  
 XX WPI; 2000-412339/35.  
 DR N-PSDB; AAA30849, AAA30850.  
 XX Nucleic acids encoding polypeptide antigens from Chlamydia useful for  
 preventing, diagnosing and treating diseases such as community acquired  
 pneumonia, bronchitis, sinusitis and asthmatic bronchitis,  
 adult-onset asthma -

XX Claim 16; Fig 3; 174pp; English.  
 PS This sequence is a Chlamydia antigen of the invention, designated  
 CC CPN100635. The nucleic acids (and their complementary sequences) may be  
 CC used as diagnostic agents for detecting the presence of nucleic acids  
 CC encoding Chlamydia antigens in samples according to standard methods,  
 CC and therefore, for diagnosing Chlamydia infections. For example, they may  
 CC be used as primers and probes for diagnostic polymerase chain reaction  
 CC (PCR) assays. Antisense sequences may be used to down regulate  
 CC expression of the proteins and may be used to treat infections. The  
 CC nucleic acids may also be used to produce the protein antigens they  
 CC encode according to standard recombinant DNA methodologies. The  
 CC proteins may then be used as antigens for the production of antibodies  
 CC (i.e., as vaccines) for preventing infection by Chlamydia. The  
 CC antibodies may also be used as diagnostic reagents for detecting  
 CC infections. Chlamydia is a pathogen implicated in the development of  
 CC (for example) community acquired pneumonia, upper respiratory tract  
 CC disease (especially bronchitis and sinusitis), asthmatic bronchitis,  
 CC adult-onset asthma and acute exacerbations of asthma in adults.  
 XX SQ Sequence 928 AA;  
 XX SQ Sequence 928 AA;

Query	Match	Score	Length	DB	Best Local Similarity	Matches	Pred.	Indels	Gaps
QY	1 MKTSIPWVLVSSVLA-F-SCHLQLSANEELLSPPDSFNGHSDGTFPTPKTSAT--TYSLT	56	928;	56	39.98;	381;	Conservative 174;	Mismatches 347;	18;
Db	1 mksqfwlvlsstslactfstsstyfaataeniqpsdfsdfqntgrtpkrttqdytit	60							
QY	57 GDVFVFPGKGPPLSDSCFQTTDNLTFLGNHSLTFGFIDGTHAGAAMSTANKNLTF	116		57					
Db	61 gditlqnldsaaltlgcfsdtttessafqkgsisflnkssae-gaalsvttdknls 119								
QY	117 SGFSLLSFDSSPSTVTT-GQGTISSLAGGVNLNIRKLVAGVNFTADGAIKGASFLL	174		117					
Db	120 tgffsltflapssvittpgkgavkcggtfdngtlfkgdycceenggaistknls 179								
QY	175 TGTSGDALFSSNNSST--KGGAAATTAGGARIANNTGYYVFRFLNSTASTSGGADDEGTSI	231		175					
Db	180 knstsisfegnksatqkqgaicatgttdttntaptifsnnaeaaginstgnc 239								
QY	232 LSNNKFLYFBBNAAKTT--CGGAIANTKAGCSPPELISNNKTLIFASNVFETSGCAIHAK	288		232					
Db	240 itgntsolvfensvtaggtggal---sgadrtisqqsrvtsqngavanggaiyak 294								
QY	289 KLAJSS--GGTEFLRNNVSSATP-KGGASISDASELGSVLTFTVNTLTTGSR	345		289					
Db	295 kitlsggggnfpnnivggttagggasilsilagecsifseadhdylngnaiyat-tp 353								
QY	346 DTPKRNAINCSNGKFTELRAKNHTIFFDPDSE--GTSDDVYLKINNGSAGALNPYQG	403		346					
Db	354 qttknsidgsgtgdheiraqsgsifdpitantaadstdtlnkdnadagnstdyqg 413								
QY	404 TLFSETSLTADELKVADNIKKSSTOPVLSGGKLUQQKVTLBTSFSOBGSLLGMD5	463		404					
Db	414 sivfsgeklsdeakvdnltstlkqpvtltagnvlkgvtldkgftqtagssvmda 473								
QY	464 GTTLTTTAGSSTITINGVINYDGLKQPVSLTAKGASNSKRLNIDIEGNYYESHM	523		464					
Db	474 gtlbkastevtlglspipds19gkkvvviaasaasknrvalsgplllongnayennd 533								
QY	524 FSHDQFLFSLKIKITVDADVDTNDISSLIPYPAEDNSEYEGFGQWVNNTDTAT--NTK	581		524					
Db	534 19ktadfsrqisa-1gtaattdpya---vptvatpthy9yggfwmtvvddastptkt	589							
QY	582 EATAWTKTGFVPSPERKSALVCNTLWGYTDIRS1SQLQVLEIGATGMEMHQGFNWSSMTN	641		582					
Db	590 tatlawntsy1lpnperqqpblvpslwgsisdiqgyiertsalticsorgfwaagvyan 649								
QY	642 FLHKTGDENRGFRHTSGGVIGGSAHTPKDDLFTRAFCHLFARDKDCFTAHNNNSRTYGG	701		642					

Db	650	fidkdhkgckkrhksqgaaqtcsenlistafccglfgsdaflyraknhtdyag	709	CC vaccines for effecting in vivo expression of antigens. The CC vaccines may also prevent atherosclerosis and bronchial asthma, CC which are possibly associated with C. pneumoniae.
Qy	702	TLEFKHSHTLQPNYIURLGRAKFSSEAEIAKPP--REPIALDQVFSFSHSNDRMETHYT	758	XX
Db	710	afyqianite-----sqfigclidkpgswshkplylegqlaysndiktky	759	Sequence 930 AA;
Qy	759	SPESEGWSWNSWNCIAGGFLPFLSNPHP---LFKTFITPQDMVVYVVSNSFEFFS 814	Query Match 36.7%; Score 1755; DB 20; Length 930;	
Db	760	apecvgsgnnafmmilgs---shsveyelhcfdtaypiknlnlyirqdsfsek g	Best Local Similarity 41.7%; Pred. No. 5. 4e-110; Matches 394; Conservative 164; Mismatches 356; Indels 30; Gaps 14	
Db	815	SDGRGFSGSIGRLNLNLSPIPGVAKFVQGDIDGSYDTSGGFFYDVSYRNPNPOSTATLWMSPD S 874	XX	
Qy	815	tegrsddsnfnlspipgkfekfsdcndsydltspypdilndpkctalvsgas	Qy 1 MKTSIPWVIVSSVLAPSCHLOSSAN---FEELSPDOSFGNQNDSDGFTPKNSA---TTY 53	
Db	815	tegrsddsnfnlspipgkfekfsdcndsydltspypdilndpkctalvsgas	Db 1 mkiplhkllistltvtpi-lissiatyadasisptsfdg aggsttptkstadtangnty 58	
Qy	875	WKIRGGNLSSLRQAELLRGSSNNYVYNCSNCELFCHAYMLRGSSRYNYVDGPKLRF	Qy 54 SLTGDVYFFYEPOKGTPLDSCPKQTDDNLTPLGNGHSLSLFGFDIAGTHAGAASTANKN 113	
Db	875	wetyanmlarqalqyragsyhfspmfevqfqflevrqssriyyvdgkqfq	Db 59 vlsqgnvindgkralgtgccttgdltitgkysfsftvdsgnagaastadka 118	
Qy	875	RESULT 14 /	Qy 114 LTFSGPSLSDPSDSSPTVWVPMVOGOTLUSAGGVNLENTRKLVAGNFST	
Db	AAW88424	AAW88424 standard; Protein; 930 AA.	Db 119 DGAIIKGA 170	
XX	AAW88424;		Db 119 1ftfgfnslfaapottvaqkstlssaganltdngtlfqsqvsneannnggaitk 178	
AC	AC		Qy 171 SELLTGTSGDALFNSNNSSSTKGGATAATTAGARIANTGYYRFLNSIATSTGGAIIDEGTS 230	
XX	XX		Db 179 tlisntssitsttsakkkggalysaaisngtgqvfmnnkgetggalfeasse 238	
DP	DP		Qy 231 ILSNNKFLYFGNGAAKTT-GGAIANTKASGSPPELLISNNKTLIFASNYAETSGGAIHA 287	
DE	DE		Db 239 sitqnsllffgngtadaagggacycgtgetpltsqksltaensvtqggaica 298	
DE	DE	Chlamydia pneumoniae surface exposed protein Omp11.	Qy 288 KRLALSSGGFTEFLRNV-SSATPKEGGAISTDASGEELSLAFTGNTFVRNLTTGSTD 346	
DE	DE	Omp11; outer membrane protein 11; surface exposed protein; antigen; infection; diagnosis; vaccine; atherosclerosis; asthma.	Db 299 hgldisaaggptlfsmnrcgntaaqkgaiatadsgsllslnsaqnditflgntlt-sap 357	
DE	DE	Chlamydia pneumoniae.	Qy 347 TPKRNAIINGNSNGKETELRAKNHTIFFYDPTISEGT-SSDYLKINNSAGALNPYQGTI 405	
DE	DE	W09858953-A2.	Db 358 tstrnalygssakinlnraaggstyfydfpiasnttgasdvtlnqpsuspldrysgt 417	
XX	XX	30-DEC-1998.	Qy 406 LPSGEFLTADELKVANNLKSSFTQPLSLGGKLLQKGTVLEESTSFSEQEASLIGMDSGT 465	
PD	PD	19-JUN-1998; 98WO-DK00266.	Db 418 vfsgeksiadakaadnftsllkqpalasqylalkqnveldvngtqftstllngpt 477	
PR	PR	23-JUN-1997; 97DK-0000744.	Qy 466 TLSTTAGSITITNLGINVDLGLKQPVSLTAGASHKXIVSGKLNLIDEGNIYESHMMS 525	
XX	(BIRK/)	BIRKELUND S. (CHR1/)	Db 478 kkadateaisitktlvvdslaregnksvsietaqanttitisplvfgdsssnfyesht- 536	
XX	CHRISTIANSEN G.	Birkeland S., Christiansen G., Knudsen K., Madsen A;	Qy 526 HDQLFSL-LKITVDAVDYDNTDSSLIPVPAEDPNSEYGFQGQWNNWTFDTATNTKEAT 584	
PI	PI	Mygind P;	Db 537 -nqafcqplvvftataasdsiydalitspvqtpehygghweaw-adst-aksqt 593	
XX	WPI: 199-105610/09.		Qy 585 ATWTKKGFPVPSPERKSALVCNTLWGVFTDLSLQLQLYEIGATGMEMHKQGFWVSSMTNLFH 644	
DR	DR	N-PSDB; AAX06823.	Db 594 mtwvtlgynpperasvpslwastqdlqqmqsansivqrgqwasqtanfh 653	
PT	PT		Qy 645 KTGDENRKGFRTISGGVYVGSAAHTPKDLETFAKCDFCTAHNNRSRTYCGTLF 704	
PT	PT		Db 654 kdksgtnqafrhkssyiyvgsaedfsemiifsvafclqfghdkd1fiventshnyasl1 713	
XX	XX	Claim 7; Page 63-65; 115PP; English.	Qy 705 FKHSHTLQPNQYLRLGRKAKESESATEKEPRETPLADQVQSFHSDNRMETHYTSPLPESE 764	
XX	XX		Db 714 lqhratig-----91pmplsfgsidiimkiliqinaiqsysytndmdrtyseaq 766	
CC	CC	Species-specific test for identifying mammals infected with Chlamydia pneumoniae - comprises detecting antibodies specific for outer membrane proteins of C. pneumoniae or nucleic acids encoding these proteins	Qy 765 GSWSNECIAAGGIGLDLDPFLVSNPHPLRKTFPQPMVEMVYQSNSPFESSSDGRGFSIGR 824	
CC	CC	This polypeptide comprises the novel 97.6 kDa surface exposed protein Omp11 of the human respiratory pathogen Chlamydia pneumoniae. Its amino acid sequence was deduced from DNA (see AAX06823) isolated from a C. pneumoniae expression library. The invention provides 12 novel surface exposed proteins, Omp4-Omp15 (see AAW88417-27), and nucleic acid sequences encoding them (see AAX06816-27). A new species specific test is claimed that is used to identify mammals (including humans) infected with Chlamydia pneumoniae. The test comprises detecting antibodies specific for Omp4-Omp15 or detecting nucleic acid fragments encoding these outer membrane proteins, especially by PCR. The proteins are also used in the diagnosis of C. pneumoniae infection in mammals. The nucleic acids and proteins can also be used in the immunization of mammals, the nucleic acids being particularly useful as DNA	Db 767 qswtansqalleggslalylkpeakepqfqqyfplkgavqrqanqkkesearfddgg 826	
CC	CC		Qy 825 LNLNSIPVGAKFVGQDIDGSTLGSFVSYDRNPNQSTALYMSPDSWKIRGNLRS 884	
CC	CC		Db 827 Ivncts'vgirlekitsedeknfieislanigdvrknprsrtslmvsgaswtslicknlar 886	
CC	CC		Qy 885 QAFLLGSGNNYYVNSNOCELEGHYAMURGSSERNYVNDGKTLRF 928	

